

Railway Group Standard

GE/RT8075

Issue Two

Date March 2015

AWS and TPWS Interface Requirements

Synopsis

This document defines the track / train and driver / machine interface requirements for the Automatic Warning System (AWS) and the Train Protection and Warning System (TPWS).

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Railway Group Standard**GE/RT8075****Issue** Two**Date** March 2015**AWS and TPWS Interface Requirements****Issue record**

Issue	Date	Comments
One	September 2013	Original document Replaces GE/RT8030 issue four and GE/RT8035 issue two
Two	March 2015	The requirements associated with assuring the operational status and sensitivity of Automatic Warning System (AWS) receivers on trains entering service, by the means of depot test magnets (DTMs), have been withdrawn as they are out of scope of Railway Group Standards. The requirements in 2.2.4.7 have been amended to specify that the AWS caution acknowledgement delay period for trains authorised to operate at speeds above 160 km/h (100 mph), which have a braking capability of 9% <i>g</i> or greater, shall be between 2.0 seconds (+/- 0.25 seconds) and 2.7 seconds (+/- 0.25 seconds).

Amended or additional parts of revised pages have been marked by a vertical black line in the adjacent margin.

Superseded documents

The following Railway Group Standard is superseded, either in whole or in part as indicated:

Superseded document	Sections superseded	Date when sections are superseded
GE/RT8075 issue one AWS and TPWS Interface Requirements	All	06 June 2015

GE/RT8075 issue one AWS and TPWS Interface Requirements, ceases to be in force and is withdrawn as of 06 June 2015.

Supply

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Part 1 Purpose and Introduction

1.1 Purpose

- 1.1.1 This document mandates requirements for the functional operation, performance and application of the Automatic Warning System (AWS) and the Train Protection and Warning System (TPWS).

1.2 Introduction

1.2.1 Background

- 1.2.1.1 AWS is provided to give train drivers in-cab warnings of the approach to signals, reductions in permissible speed and temporary / emergency speed restrictions, and to apply the brakes in the event that a driver does not acknowledge cautionary warnings given by the system within the specified time.
- 1.2.1.2 TPWS is a train protection system compliant with the train protection requirements of the Railway Safety Regulations: 1999. The primary purpose of TPWS is to minimise the consequence of a train passing a TPWS fitted signal at danger and a train overspeeding at certain other locations.

1.2.2 Principles

- 1.2.2.1 The requirements of this document are based on the following principles.
- 1.2.2.2 AWS and TPWS are the principal warning and train protection systems which are installed on most Network Rail lines and on most rolling stock operating over them. The only exceptions are certain lines which are fitted with mechanical trainstops, lines fitted with ETCS, and trains which operate only over those lines.
- 1.2.2.3 The principles of operation of AWS and TPWS are set out in GE/GN8675.

1.2.3 Supporting documents

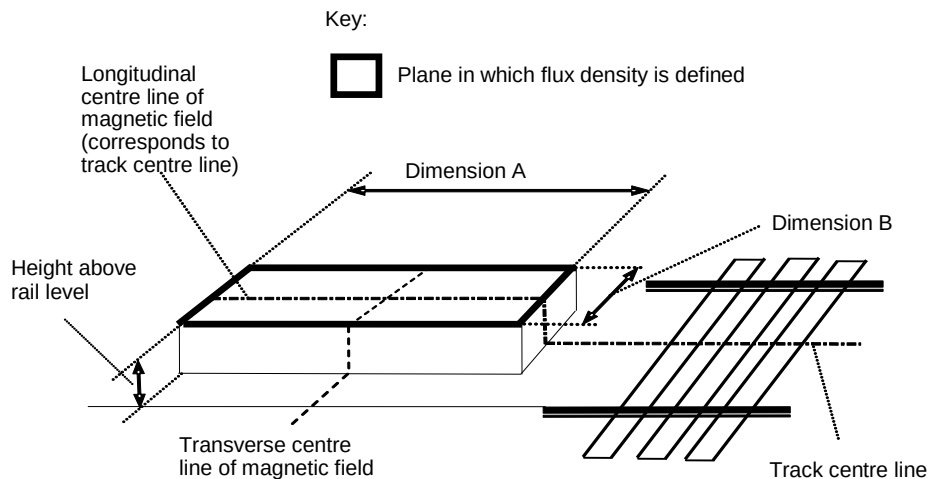
- 1.2.3.1 The following Rail Industry Guidance Notes support this Railway Group Standard:
- GE/GN8675 Guidance on AWS and TPWS Interface Requirements

1.3 Approval and authorisation of this document

- 1.3.1 The content of this document was approved by Control Command and Signalling (CCS) Standards Committee on 18 September 2014.
- 1.3.2 This document was authorised by RSSB on 13 November 2014.

Railway Group Standard**GE/RT8075****Issue** Two**Date** March 2015**AWS and TPWS Interface Requirements****Part 2 Track / Train Interface for AWS****2.1 AWS track sub-system****2.1.1 General requirements for AWS track equipment**

- 2.1.1.1 AWS permanent magnets, including suppressor magnets, shall be mounted on the track with their south pole uppermost.
- 2.1.1.2 AWS electromagnets shall be mounted on the track with their north pole uppermost.
- 2.1.1.3 The magnetic centres of AWS magnets shall be positioned between the running rails, within 10 mm of the track centre line.
- 2.1.1.4 Where AWS magnets are used in combinations, as set out in Table 7, the distance between the magnetic centres of adjacent magnets, measured longitudinally along the track centre line, shall be not less than 0.70 m and not more than 0.75 m.
- 2.1.1.5 The uppermost surfaces of AWS magnets shall be not more than 12 mm above rail level.
- 2.1.1.6 The magnetic flux densities of AWS track magnets specified in 2.1.2 and 2.1.3 for standard strength magnets and in 2.1.4 and 2.1.5 for extra strength magnets shall apply throughout the planes above the magnet defined in Figure 1 and Table 1.

**Figure 1** Defined magnetic field planes above AWS track magnet

Type of AWS magnet	Dimension A in Figure 1 (mm)	Dimension B in Figure 1 (mm)
Standard strength (except depot test magnets)	150	100
Extra strength (except depot test magnets)	70	100
Depot test magnets	50	50

Table 1 Dimensions of magnetic field planes above AWS track magnet

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2.1.2 Magnetic field requirements for standard strength track equipment

2.1.2.1 The minimum magnetic flux density of the magnetic field of a standard strength AWS magnet in free air shall conform to the limits set out in Table 2 throughout the plane above the magnet shown in Figure 1.

Height above rail level (mm)	Minimum flux density (mT) for standard strength magnets
100	5.0
120	4.1
140	3.4
160	2.8
180	2.3
200	2.0

Table 2 Magnetic flux densities for standard strength track equipment

2.1.2.2 The minimum flux densities set out in Table 2 shall apply to:

- Permanent magnets, including portable magnets for temporary and emergency speed restrictions.
- Electromagnets when energised.
- Suppressor magnets when not suppressed.

2.1.2.3 For all types of standard strength magnets, except depot test magnets, the maximum flux density at 115 mm above rail level shall be 18 mT.

2.1.2.4 The maximum flux density produced by a de-energised standard strength electromagnet at 115 mm above rail level shall be 0.7 mT.

2.1.2.5 The maximum flux density produced by a suppressed standard strength magnet at 115 mm above rail level shall be 0.7 mT.

2.1.3 Magnetic field requirements for standard strength depot test magnets

2.1.3.1 For standard strength depot test magnets (where provided) the minimum and maximum magnetic flux density of the magnetic field in free air shall conform to the limits set out in Table 3 throughout the plane above the magnet shown in Figure 1.

Height above rail level (mm)	Minimum flux density (mT) for standard strength depot test magnets	Maximum flux density (mT) for standard strength depot test magnets
100	4.8	5.0
120	3.9	4.1
140	3.2	3.4
160	2.6	2.8
180	2.1	2.3
200	1.8	2.0

Table 3 Magnetic flux densities for standard strength depot test magnets

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2.1.4 Magnetic field requirements for extra strength track equipment

2.1.4.1 The minimum magnetic flux density of the magnetic field of an extra strength AWS magnet in free air shall conform to the limits set out in Table 4 throughout the plane above the magnet shown in Figure 1.

Height above rail level (mm)	Minimum flux density (mT) for extra strength magnets
120	6.5
140	6.1
160	5.7
180	5.3
200	5.0
220	4.6

Table 4 Magnetic flux densities for extra strength track equipment

2.1.4.2 The minimum flux densities set out in Table 4 apply to:

- Permanent magnets, including portable magnets for temporary and emergency speed restrictions.
- Electromagnets when energised.
- Suppressor magnets when not suppressed.

2.1.4.3 For all types of extra strength magnets, except depot test magnets, the maximum flux density at 193 mm above rail level shall be 20 mT.

2.1.4.4 The maximum flux density produced by a de-energised extra strength electromagnet at 193 mm above rail level shall be 1.2 mT.

2.1.4.5 The maximum flux density produced by a suppressed extra strength magnet at 115 mm above rail level shall be 1.2 mT.

2.1.5 Magnetic field requirements for extra strength depot test magnets

2.1.5.1 For extra strength depot test magnets (where provided) the minimum and maximum magnetic flux density of the magnetic field in free air shall conform to the limits set out in Table 5 throughout the plane above the magnet shown in Figure 1.

Height above rail level (mm)	Minimum flux density (mT) for extra strength depot test magnets	Maximum flux density (mT) for extra strength depot test magnets
120	6.2	6.5
140	5.8	6.1
160	5.4	5.7
180	5.0	5.3
200	4.8	5.0
220	4.4	4.6

Table 5 Magnetic flux densities for extra strength depot test magnets

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2.1.6 Provision of AWS track equipment – lines to be fitted

- 2.1.6.1 AWS shall be fitted on all signalled lines, except those where an alternative train protection system providing a level of protection equivalent to or better than that provided by AWS and TPWS is fitted and operational on the infrastructure and on all trains operating on the route.

2.1.7 Provision of AWS track equipment – equipment to be provided

- 2.1.7.1 On fitted lines, AWS equipment shall be provided at signals in accordance with Table 6, except where AWS gaps are permitted by the provisions of 2.1.9.1.

Type of signal at which AWS shall be fitted	Exemptions from fitment
All colour light signals	a) Signals that have no main signalled route leading up to them (including the platform starting signal nearest to the buffer stops on bay and terminal platform lines and signals provided solely for turnback moves). b) Signals that give access to running lines from non-running lines where: i) Trains usually come to a stand. And ii) Trap points are provided to protect the running line(s). c) A colour light stop signal in a block signalling area where: i) The stop signals controlled by adjacent signal boxes are not fitted with AWS track equipment. And either: ii) This signal cannot display a cautionary aspect. Or iii) If the signal displays a cautionary aspect when the signal ahead is at danger, this aspect is approach released and preceded by a distant signal displaying an ON aspect. This exemption from fitment does not apply, however, where a colour light signal controls entry to a single line. In these circumstances AWS track equipment shall be provided unless the signal is exempt under (a) above.
All semaphore distant signals and distant boards	None

Table 6 Provision of AWS at signals

- 2.1.7.2 AWS equipment shall be provided only at the locations and for the purposes set out in this document and in GK/RT0075 and GK/RT0192.
- 2.1.7.3 On bi-directionally signalled lines, AWS track equipment shall be provided for signalled train movements in both directions.

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- 2.1.7.4 Magnets, or combinations of magnets, shall be provided and configured as set out in Table 7.

Application	Magnets to be provided
a) Colour light signal not capable of displaying a green aspect. b) Semaphore distant signal fixed at caution. c) Fixed distant board.	Permanent magnet (south pole).
d) Colour light signal capable of displaying a green aspect. e) Semaphore distant signal (except those fixed at caution).	Permanent magnet (south pole) followed, in the direction of travel, by an electromagnet (north pole).
f) Two colour light signals or semaphore distant signals for movements in opposite directions, sharing a common set of AWS track equipment.	Permanent magnet (south pole), with electromagnets (north pole) both before and after the permanent magnet. (Where either of the signals is not capable of displaying a green (or distant signal 'off') aspect, the electromagnet for that signal is not required.)
g) Warning of an approach to a reduction in permissible speed. h) Warning of an approach to a level crossing.	Permanent magnet (south pole).
i) Warning of an approach to a temporary or emergency speed restriction (where required by GK/RT0075).	Permanent magnet (south pole).

Table 7 Configurations of AWS track magnets

- 2.1.7.5 Where AWS is required to be suppressed, a suppressor magnet shall be provided instead of the permanent magnet.

- 2.1.7.6 Standard strength AWS magnets shall be used on lines that are not DC electrified.

- 2.1.7.7 Extra strength AWS magnets shall be used on DC third rail electrified lines.

2.1.8 Provision of AWS track equipment – position of equipment

- 2.1.8.1 AWS track equipment shall be positioned not less than three seconds running time at the permissible speed before the associated signal or sign.

- 2.1.8.2 AWS track equipment shall be positioned 180 m (+ 18 m, – 9 m) before the associated signal or sign, except where any of the following apply:

- a) On a section of line where existing AWS track equipment at successive signals is positioned 230 m (+ 23 m, – 11.5 m) before signals, it is permissible for new AWS track equipment also to be positioned at this distance, provided that this does not create additional risk.

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- b) On bi-directionally signalled platform lines, it is permissible to position AWS track equipment at distances other than those specified above where common AWS track equipment is provided for signals applying in opposite directions, in order to achieve correct operation of the equipment for train movements.
- c) Where the AWS magnet is positioned less than 180 m from the signal or sign so that the driver is able to read the associated signal aspect or sign when the audible warning is received.
- d) On a non-passenger line on which permissive working is authorised, the AWS track equipment may be positioned beyond, but as close as practicable to, the signal.
- e) Where infrastructure constraints prevent the installation of AWS equipment at the standard position.
- f) Where an alternative position is required to meet the constraints set out in 2.1.8.3.
- g) Where the AWS magnet is positioned beyond the signal in the circumstances set out in 2.1.8.7a).
- h) Where a signal sighting committee (SSC) recommends an alternative position and this achieves a reduction in risk.

2.1.8.3 AWS equipment shall not be positioned:

- a) Where a train is likely to come to a stand with the receiver for the active driving position over the AWS track equipment.
- b) Within four seconds travelling time of any other AWS track equipment (calculated at the permissible speed), except where one or other of the sets of equipment is always suppressed for any movement over them.
- c) Where AWS equipment could interfere with the correct operation of Automatic Power Control (APC) equipment, or vice versa.
- d) Where the correct operation of the AWS track equipment could be jeopardised by the proximity of DC traction cables or impedance bonds. Specifically, on DC electrified lines, AWS track equipment shall not be positioned:
 - i) Less than 3.5 m from cross-track traction feeder cables, traction return bonds or impedance bonds.
 - ii) Less than 1.5 seconds travelling time (measured at the permissible speed) before cross-track traction feeder cables, traction return bonds or impedance bonds.

2.1.8.4 An SSC shall agree the position of the AWS track equipment where either:

- a) The distance of the track equipment from the signal or sign is other than 180 m (+ 18 m, – 9 m).

Or

- b) The AWS audible indication is received by the driver before the signal or sign becomes visible.

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2.1.8.5 In considering the position of AWS track equipment, the SSC shall assess whether the positioning of the equipment will:

- a) Help the driver to read the associated signal or sign safely.

And

- b) Not create a risk that the driver fails to associate the audible warning with the signal or sign.

2.1.8.6 The following infrastructure features shall not be positioned between a signal or sign and its associated AWS track equipment:

- a) Another main signal applicable to movements in the same direction.
- b) A warning indicator for a reduction in permissible speed.
- c) A warning board for a temporary or emergency speed restriction.
- d) Other AWS equipment applicable to movements in the same direction.

2.1.8.7 Where a signal controls train movements from a running line not fitted with AWS track equipment to a running line that is fitted, one of the following arrangements shall apply:

- a) Where there is a turnout from a through running line not fitted with AWS onto an AWS fitted line, AWS track equipment shall be provided for the stop signal controlling the movement onto the fitted line. The track equipment shall incorporate provision for suppression, and shall be positioned beyond, but as close as practicable to, the signal.

The signals that display cautionary aspects associated with the stop signal shall not be fitted with AWS.

Or

- b) Where a running line not fitted with AWS converges with an AWS fitted line, the stop signal controlling movements from the unfitted line to the fitted line and any associated signals displaying cautionary aspects shall be fitted with AWS track equipment in accordance with the requirements set out in 2.1.6.

2.1.9 AWS gap areas

2.1.9.1 When an existing signalling layout incorporating an AWS gap area (a station area not fitted with AWS track equipment) is resignalled, AWS track equipment shall be provided, unless both of the following apply:

- a) Permissible speeds in the unfitted area do not exceed 50 km/h (30 mph).

And

- b) A risk assessment shows that absence of AWS track equipment within the gap area does not introduce an unacceptable risk.

2.1.9.2 The geographical limits of an AWS gap shall be clearly identifiable.

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2.1.9.3 Lineside signs shall be provided to indicate the commencement and termination of the AWS gap on all running lines that provide entry to or exit from the gap area as follows:

- a) A 'commencement of AWS gap' lineside sign shall be provided at or beyond the last fitted signal and before the position where the AWS track equipment for the next signal would have been, had it been provided.

And

- b) A 'termination of AWS gap' sign shall be provided beyond the last signal not fitted with AWS and not less than four seconds' travelling time at the permissible speed before the AWS track equipment for the first fitted signal.

2.1.10 Control of AWS track equipment

2.1.10.1 The AWS electromagnet shall be energised only when the associated colour light signal is displaying a green aspect, or when the associated semaphore distant signal is intentionally displaying the OFF aspect.

2.1.10.2 In the case of a splitting distant signal, the AWS electromagnet shall be energised if either signal colour light head is displaying a green aspect.

2.1.10.3 Where an AWS magnet is positioned beyond the signal, as set out in 2.1.8.2d), the AWS track equipment shall be controlled to provide an indication that is consistent with the aspect seen by the driver at the time of passing the signal.

2.1.10.4 Where a suppressed AWS magnet is situated beyond the signal protecting a turnout from a through unfitted line, as set out in 2.1.8.7, the magnet shall be suppressed for movements along the unfitted line.

2.1.10.5 For movements through the turnout onto the fitted line, the AWS track equipment shall be controlled to provide an indication that is consistent with the aspect seen by the driver at the time of passing the signal controlling the movement onto the fitted line.

2.1.11 Suppression of AWS track equipment

2.1.11.1 On bi-directionally signalled lines, except where AWS track equipment is effective for movements in both directions, as set out in Table 7 item f), the magnetic field of the AWS track equipment shall be suppressed for signalled movements in the direction to which the equipment does not apply, except as permitted by 2.1.11.4 and 2.1.11.5.

2.1.11.2 Suppression shall be effective from before the vehicle on which the receiver for the active driving position is mounted has reached the AWS track equipment until that vehicle has passed over the AWS track equipment.

2.1.11.3 Where a semaphore junction signal has both stop and distant arms but the distant arm(s) are not applicable to all routes, the AWS equipment shall be suppressed when the signal is cleared for a route to which the distant arm(s) is / are not applicable.

2.1.11.4 It is permissible for AWS track equipment not to be suppressed for:

- a) Shunting movements on unidirectionally signalled lines.
- b) Unsignalled movements.

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- c) Movements over AWS magnets associated with warning boards for temporary / emergency restrictions that are not applicable to the direction of movement.

2.1.11.5 On lightly used single lines it is permissible for AWS track equipment not to be suppressed for movements in the direction to which the AWS indication does not apply where this is justified by a risk assessment.

2.1.11.6 Provision or non-provision of suppression of AWS track equipment shall be applied consistently on all single line sections on an operating route.

2.1.12 AWS cancelling indicators

2.1.12.1 Where AWS track equipment is not suppressed for signalled movements in the opposite direction, as permitted by 2.1.11.4c) and 2.1.11.5, an AWS cancelling indicator shall be provided for each set of track equipment.

2.1.12.2 The AWS cancelling indicator shall be positioned:

- a) 180 m (+ 18 m, – 9 m) beyond the AWS track equipment in the direction of movement to which the equipment does not apply.

And

- b) Facing trains travelling in the direction to which the AWS track equipment does not apply.

2.1.12.3 The AWS cancelling indicator shall be positioned so that it is readable from the normal driving position when the train passes over the unsuppressed track equipment.

2.2 AWS train sub-system**2.2.1 Provision of trainborne AWS equipment**

2.2.1.1 AWS trainborne equipment shall be fitted to all vehicles that have a driving cab, with the exception of the following types of vehicles:

- a) Locomotives used exclusively for shunting purposes.
- b) Vehicles that operate solely within T3 possessions.
- c) Vehicles that are authorised to operate only on lines where an alternative train protection system providing a level of protection equivalent to or better than that provided by AWS and TPWS is fitted and operational on both the trains and the infrastructure.

2.2.1.2 It is permissible to suppress the operation of the AWS train sub-system when an alternative train protection system providing a level of protection equivalent to or better than that provided by AWS and TPWS is fitted and operational on the train and on the track over which the train is operating.

2.2.2 Receiver sensitivity requirements for AWS train sub-system

2.2.2.1 AWS receivers shall be capable of detecting the sequences and polarities of magnetic fields emitted by the configurations of AWS track magnets set out in Table 7.

2.2.2.2 On lines fitted with standard strength magnets, the trainborne equipment shall be capable of detecting the minimum field strengths set out in Table 8, measured in free air at the heights above rail level set out in the table and directly above the track centre line.

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Height above rail level (mm)	Flux density (mT) which trainborne AWS equipment shall detect
100	4.8
120	3.9
140	3.2
160	2.6
180	2.1
200	1.8

Table 8 Magnetic flux densities for standard strength AWS receivers

- 2.2.2.3 On lines fitted with extra strength magnets, the trainborne equipment shall be capable of detecting the minimum field strengths set out in Table 9, measured in free air at the heights above rail level set out in the table and directly above the track centre line.

Height above rail level (mm)	Flux density (mT) which trainborne AWS equipment shall detect
120	6.2
140	5.8
160	5.4
180	5.0
200	4.8
220	4.4

Table 9 Magnetic flux densities for extra strength AWS receivers

- 2.2.2.4 Trainborne AWS equipment shall not detect magnetic fields producing a flux density less than 1.5 mT at a height of 115 mm above rail level and directly above the track centre line.
- 2.2.2.5 AWS receivers shall be positioned so that:
- They are within 18 m of all the driving positions in the cabs that they provide with indications.
 - The time delay experienced by the driver between passing over a track magnet and receiving the audible warning, for a given speed, is consistent for all rolling stock of the same class.
 - The trainborne AWS equipment will not respond to the magnetic fields of APC magnets.
 - So far as is practicable, the trainborne AWS equipment will not respond to extraneous magnetic fields from DC traction supply infrastructure or impedance bonds.

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- 2.2.2.6 Each AWS equipped vehicle of an electric train that operates over both AC and DC electrified lines shall be fitted with two separate receivers, or one receiver with switchable sensitivity, with appropriate sensitivities for use on DC electrified lines, as set out in Table 9, and on other lines, as set out in Table 8.
- 2.2.2.7 Where switchable receiver sensitivities are provided (in accordance with 2.2.2.6), the appropriate receiver or receiver sensitivity for the line over which the train is passing shall be selected automatically.
- 2.2.2.8 So far as is reasonably practicable, on trains that are fitted with AWS receivers with switchable sensitivity for operation on DC electrified lines and on other lines (in accordance with 2.2.2.6), a failure of the automatic selection sub-system shall cause the receiver(s) to default to the 'other lines' configuration.

2.2.3 Operation of trainborne AWS equipment

- 2.2.3.1 The interface between the AWS and the train brake system shall enable an emergency brake application, or where available an enhanced emergency brake application, to be initiated and cancelled.
- 2.2.3.2 Each vehicle shall be fitted with an isolation device to enable the trainborne AWS equipment to be isolated. Requirements for the controlling device and associated indications are set out in Part 4.
- 2.2.3.3 The trainborne AWS equipment shall be capable of operating at train speeds up to at least the lower of:
 - a) The maximum permissible speed of the vehicle in which it is installed.
 And
 - b) The maximum speed at which the AWS is required to be operational.
- 2.2.3.4 The trainborne AWS equipment shall be capable of operating down to a minimum speed of 5 km/h.
- 2.2.3.5 The trainborne AWS equipment shall respond within 100 ms to:
 - a) Detection of the presence of magnetic fields of the relevant flux densities set out in 2.1.2 and 2.1.4.
 And
 - b) Operation of the caution acknowledgement device.

2.2.4 AWS functional requirements and states

- 2.2.4.1 The trainborne AWS equipment shall comply with the functional requirements set out in Table 10 to Table 18. The functional requirements are expressed in the form of functional states and the transitions between them.

AWS and TPWS Interface Requirements

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2.2.4.2 The rows in each table have the following meanings:

State	Indicates the state that the table is describing
Valid preceding state(s)	Indicates which state(s) (functional or non-functional) it is permissible for the equipment to have been in prior to entering this state.
Entry conditions	Indicates the conditions that shall be satisfied before this state is entered. The equipment shall also be in one of the defined valid previous states in order to enter this state.
Events on entry	Indicates the events that shall take place immediately upon entry into this state.
Status during state	Indicates the status of the equipment that shall be maintained while it is in this state.
Exit conditions	Indicates the conditions that shall be fulfilled before the equipment can move from this state to another one.
Next valid state(s)	Indicates which functional states it is permissible for the equipment to move to on leaving this state.

2.2.4.3 The operational ready state shall be the normal operational state of the trainborne AWS equipment on initialisation. The equipment shall return to the operational ready state after having passed over a set of AWS track magnets and, where appropriate, the driver has responded to the audible warning given in response to the track magnets.

State	Operational ready state
Valid preceding state(s)	Clear signal response state, or Restrictive acknowledgement state, or Brake demand acknowledgement state, or System isolation state. The equipment also enters this state on initialisation after a self-test routine has been satisfactorily completed, as set out in 2.2.5
Entry conditions	See exit conditions of valid preceding states
Events on entry	None
Status during state	Equipment is capable of detecting south pole magnetic fields of AWS track equipment, and Audible indicator is silent, and Visual indicator is maintained in its last set indication ('all black' or 'black and yellow'), and No AWS brake demand is applied
Exit conditions	South pole of an AWS track magnet is detected
Next valid state(s)	Primed state

Table 10 Operational ready state

2.2.4.4 The trainborne AWS equipment shall enter the primed state when it has passed over the south pole of an AWS track magnet and is waiting to determine whether there is an energised electromagnet (north pole) immediately after it.